

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313 on:

RESPONSE UNDER 37 CFR §1.111
Examining Group 1638
Patent Application
Docket No. CIB-T100XC1
Serial No. 09/685,403

September 3, 2003

Amy Nguyen
Amy Nguyen, Legal Assistant



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner : David H. Kruse
Art Unit : 1638
Applicants : Peter R. Beetham, Patricia L. Avissar, Keith A. Walker, Richard A. Metz
Serial No. : 09/685,403
Filed : October 10, 2000
Confirm. No. : 4644
For : Non-Transgenic Herbicide Resistant Plant

Drawing Review Branch
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

SUBMISSION OF FORMAL DRAWINGS

Sir:

Submitted herewith please find 14 sheets of formal drawings (Figs. 1-7). The Examiner is respectfully requested to acknowledge receipt of these formal drawings.

The submitted drawings are now all on the same size paper and are believed to obviate the informalities indicated on Form PTO-948 attached to the Office Action mailed June 3, 2003.

Respectfully submitted,

John M. Sanders
John M. Sanders
Patent Attorney

Registration No. 30,126
Phone: 352-375-8100
Fax No.: 352-372-5800
Address: 2421 N.W. 41st Street, Suite A-1
Gainesville, FL 32606-6669

JS/an

Attachments: 14 sheets of formal drawings



DNA sequence:

cccttcacgtcctttttagaaccacattatctttcttagggcccaattgaaaaccacattttctttcacctaacc
ccaaagccttgacacatgttgacgtgaacaccaaactaacacgtgtcactgcccagtggttatgataaatgctcatacc
ataccagagtcataagagtttttggttggtgaaagatttgacggatgccttctctcattttctcaccaactccctccaaa
cccaacaaaatgtttatattagcaaacgcccgaagtgtaaacgaaagttataaatttcatttctgtgatcttacgta
attggaggaaagatcaaaattttcaatccccattcttcgattgcttcaattgaagtttctccg

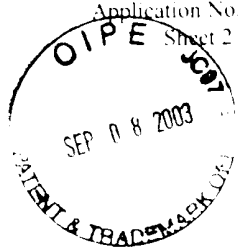
[transit peptide start]

ATGGCGCAAGTTAGCAGAATCTGCAATGGTGTGCAGAACCCTCTCTTATCTCCAATCTCTCGAAATCCAGTCAACGCA
AATCTCCCTTATCGGTTTCTCTGAAGACGCAGCAGCATCCACGAGCTTATCCGATTTCTGTCGTGCTGGGGATTGAAGAA
GAGTGGGATGACGTTAATTGGCTCTGAGCTTCGTCCTCTTAAGGTCATGTCTTCTGTTTCCACGGCGGAG

[mature peptide starts]

AAAGCGTCCGAGATTGTAACCTCAACCCATTAGAGAAATCTCCGCTCTTATTAAGCTTCTCGGCTCCAAGTCTCTATCAA
ATCGGATCCTGCTTCTCGCTGCTCTGCTGAGGTATATATCACTTCGTTTCGTCCTTCTCTGTAATCTGAACCTTAGATT
ATAAAGATTGATACTTTACCATTTTGTCTGTGGTTTTATAGGGAACAACCTGTAGTGGACAACCTGTTGAATAGCGATGAC
ATCAATTACATGCTTGATGCGTTGAAGAGATTGGGACTTAATGTGGAACTGACAGTGAAAATAATCGTGTCTGTAGTTG
AAGGATGTGGCGGGATATTCCAGCTTCCATAGATTCAAAGAGTGATATCGAACTTTACCTCGGTAATGCAGGAACAGC
AATGCGTCCCACTTACCCTGCGGTCACTGCTGCAGGTGGAACGCAAGGTAGATTGAAGGAGTTGATGCTTCTTGGTAT
TTGATGTTTAAAGGAATGGAGCTTTTGTGATGCTTATGATCCATTTATCCAGTTATGTGCTTGTATGGGTGCTCGT
ATGAGAGAAAGACCTATAGGGGATTTGGTTGTTGGTCTTAAGCAGCTTGGTGTGATGTTGAATGTACTCTTGGAACTA
ACTGCCCTCTGTTCTGTCAACGCTAATGGTGGCCTTCCCGGTGGAAGGTTAGATCTTGCAAATGGCATGTGAATAT
GTAATCTCGTTCCTTACTCTATGAACACTTGCAGAAATGTGTGTTTCATCATAGCCTTAGCTTGACAAGATTTCACTTTT
TAATCTACTCTCAACGGATGGATCCTAAATAGAAATCGGATTTGGTGATTGGTTTTCTGTTCTCGATTACCGTTTTCTGTT
GTATGATTTCTTGATTAACAATTAGGAGACATGTTATGCATTTGCAGGTGAAGCTTCTGGATCAATTAGTAGTCAGTA
CTTGACTGCTCTGCTCATGTCTGCTCCCTTAGCTCTTGGAGACGTCGAGATTGAGATTGTGATAAATTAATTTCTGTT
CCATATGTTGAAATGACATTGAAGTTGATGGAACGTTTTCGGGGTTAGTGTGAGCATAGTGATAGCTGGGATCGTTTCT
TTGTCAAGGGCGGGCAAAAATACAAGTAGGAGTTATTCTTTTCTTCTTTTCTGAAATCACATCCCTTAGCTTGACAAT
ATAATGACTAAAAGGTGAATGATTCAAGTCTCCGGGTAATGCGTATGTAGAAGGTGATGCTTCTAGTGATGTTATTTC
TTGGCTGGTGTGCTGCCATTACCGGTGAACTGTGACAGTCGAAGGTTGTGGAACCTACCAGCTTGACAGTAATATTTGTAC
ACTGAATCATCGACGAGGCTGTTAAGTTTATAGTGAAATTCGTCTAGGTCAAAGTTTCATCTTTTGACAAGTTGTATAT
AACATATTCGCAAGATTCTAAGCTCAATTTTTGTGATGAATCTCTAGGGAGATGTAAAATTCGCCGAGGTCCTTGAGAA
AATGGGATGTAAAGTGTCTGGACAGAGAACAGTGTGACTGTGACAGGACCACCTAGAGATGCTTTTGAATGAGACAC
TTGCGGGCTATTGATGTCAACATGAACAAAATGCCTGATGTAGCCATGACCCTTGCCGTCGTTGCTCTCTTTGCTGACG
GTCCAACCACTTAGAGATGGTAAGTAAAAGCTCTCTCTTATAATTAAGGTTTCTCAATATTCATGATCACTTAATT
CTGTTTGGTTAATATAGTGGCTAGCTGGAGAGTAAAGGAGACAGAAAGGATGATTGCCATTTGCACAGAGCTTAGAAAA
GTAAGAGATTCTTATCTCTCTCTTCTGTCTCTTGACAGTGCTCATTCTAAGTAATTAGCTCATAAATTTGTGTGTTT
TGTTTCAGCTGGGAGCTACAGTGAAGAAGGTTCAAGATTATTTGTGTGATAACTCCGCCCAAAAAGGTGAAAACGGCAGAG
ATTGATACATATGATGATCATAGAAATGGCAATGGCATTCTCTTTCAGCTGTGCTGATGTTCCAATCACCATCAACG
ACTCTGTTGACACAGGAAACCTTCCCGACTACTTCCAAGTACTTGAAGAATCACAAAGCACTAAacaataaactc
tgttttttcttctgatccaagctt

FIG. 1A



Protein sequence:

MAQVSRICNGVQNPSLISNLSKSSQRKSPLSVSLKTQQHPRAYPISSSWGLKKSGMTLIGSELRLPKVMSSVSTAE
KASEIVLQPIREISGLIKLPGSKSLSNRIILLALSEGTTVDNLLNSDDINYMLDALKRLGLNVETDSENNRAVV
EGCGGIFPASIDSKSDIELYLGNAGTAMRPLTAAVTAAGGNASYVLDGVPRMRERPIGDLVVGLKQLGADVECTLG
TNCPPVRVNANGGLPGGKVKLSGSISSQYLTAALLMSAPLALGDVEIEIVDKLISVPYVEMTLKLMERFGVSVEHSD
SWDRFFVKGGQKYKSPGNAYVEGDASSACYFLAGAAITGETVTVEGCGTTSLQGDVKFAEVLEKMGCKVSWTENS
TVTGPPRDAFGMRHLRAIDVNMNKM~~P~~DVAMTLAVVALFADGPTTIRDVASWRVKETERMIAICTELRKL~~G~~ATVEEG
SDYCVITPPKKVKTAEIDTYDDHRMAMAFSLAACADVPIITINDSGCTRKTFPDYFQVLERITKH

FIG. 1B



Arabidopsis thaliana wild type sequence:

Position	173	174	175	176	177	178	179	180	181	182	183
	L	G	N	A	G	T	A	M	R	P	L
	CTC	GGT	AAT	GCA	GGA	ACA	GCA	ATG	CGT	CCA	CTT

Arabidopsis thaliana mutant sequences:

Name											
A ₁₇₇	CTC	GGT	AAT	GCA	GCA	ACA	GCA	ATG	CGT	CCA	CTT
	L	G	N	A	A	T	A	M	R	P	L
I ₁₇₈	CTC	GGT	AAT	GCA	GGA	ATA	GCA	ATG	CGT	CCA	CTT
	L	G	N	A	I	T	A	M	R	P	L
A ₁₇₇ I ₁₇₈	CTC	GGT	AAT	GCA	GCA	ATA	GCA	ATG	CGT	CCA	CTT
	L	G	N	A	A	I	A	M	R	P	L
I ₁₇₈ S ₁₈₂	CTC	GGT	AAT	GCA	GGA	ATA	GCA	ATG	CGT	TCA	CTT
	L	G	N	A	G	I	A	M	R	S	L
A ₁₇₇ S ₁₈₂	CTC	GGT	AAT	GCA	GCA	ACA	GCA	ATG	CGT	TCA	CTT
	L	G	N	A	A	T	A	M	R	S	L
A ₁₇₇ I ₁₇₈ S ₁₈₂	CTC	GGT	AAT	GCA	GCA	ATA	GCA	ATG	CGT	TCA	CTT
	L	G	N	A	A	I	A	M	R	S	L
V ₁₇₈ S ₁₈₂	CTC	GGT	AAT	GCA	GGA	GTA	GCA	ATG	CGT	TCA	CTT
	L	G	N	A	G	V	A	M	R	S	L
L ₁₇₈ S ₁₈₂	CTC	GGT	AAT	GCA	GGA	TTA	GCA	ATG	CGT	TCA	CTT
	L	G	N	A	G	L	A	M	R	S	L
A ₁₇₇ V ₁₇₈	CTC	GGT	AAT	GCA	GCA	GTA	GCA	ATG	CGT	CCA	CTT
	L	G	N	A	A	V	A	M	R	P	L
A ₁₇₇ L ₁₇₈	CTC	GGT	AAT	GCA	GCA	TTA	GCA	ATG	CGT	CCA	CTT
	L	G	N	A	A	L	A	M	R	P	L

FIG. 2



Section 1

[illegible]

Category	seq
break	seq
pe a'	seq
;	seq
nsus	seq

Section 2

	72	80	90	100	110	120	130	142	
(72)	GGGT	GGGG	GGGG	GGGG	GGGG	GGGG	GGGG	ATCCGA	
(69)	GGGT	GGGG	GGGG	GGGG	GGGG	GGGG	GGGG	GGGG	
(72)	GGGT	GGGG	GGGG	GGGG	GGGG	GGGG	GGGG	GGGG	
(69)	GGGT	GGGG	GGGG	GGGG	GGGG	GGGG	GGGG	GGGG	
(5)	GGGT	GGGG	GGGG	GGGG	GGGG	GGGG	GGGG	GGGG	
(72)	CAA	CAAC	CAAA	CTCC	TTT	TC	GTTTCT	TTGAAGACGCAGCAGCAT	CACGAGCTT

category	a.seq
breed	a.seq
petal	a.seq
?	s.seq
	ensus

Section 3

[illegible]

ate;	.seq
t m	a.seq
pota	a.seq
.	s.seq
	nsus

Section 4

(214) 214 TGT
(205) 240 G
(193) 230 T C
(193) 220 A A G G T A A C
(13) ----- AGATCGTCGCA
(214) ACAGCTTCTGTTCCACGGC GAGAAAGCTTC GAGATTGTGCTTCAACCCATTAGAGAAATCTCCGGTCT

ate;	A.seq
bm*	a.seq
pta	a.seq
	s.seq
	nsus

(356) a.seq
 (347) a.seq
 (335) b1.seq
 (335) b2.seq
 (128) a.seq
 (356) consus

356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

Section 7

[illegible]



Section 9		639	
seq	(569)	569	580
seq	(560)	580	590
seq	(548)	590	600
seq	(548)	600	610
seq	(538)	610	620
seq	(538)	620	639
seq	(538)	639	640
seq	(538)	640	650
seq	(538)	650	660
seq	(538)	660	670
seq	(538)	670	680
seq	(538)	680	690
seq	(538)	690	700
seq	(538)	700	710
seq	(538)	710	720
seq	(538)	720	730
seq	(538)	730	740
seq	(538)	740	750
seq	(538)	750	760
seq	(538)	760	770
seq	(538)	770	781
seq	(538)	781	790
seq	(538)	790	800
seq	(538)	800	810
seq	(538)	810	820
seq	(538)	820	830
seq	(538)	830	840
seq	(538)	840	852
seq	(538)	852	860
seq	(538)	860	870
seq	(538)	870	880
seq	(538)	880	890
seq	(538)	890	900
seq	(538)	900	910
seq	(538)	910	920
seq	(538)	920	930
seq	(538)	930	940
seq	(538)	940	950
seq	(538)	950	960
seq	(538)	960	970
seq	(538)	970	980
seq	(538)	980	990
seq	(538)	990	1000
seq	(538)	1000	1010
seq	(538)	1010	1020
seq	(538)	1020	1030
seq	(538)	1030	1040
seq	(538)	1040	1050
seq	(538)	1050	1060
seq	(538)	1060	1070
seq	(538)	1070	1080
seq	(538)	1080	1090
seq	(538)	1090	1100
seq	(538)	1100	1110
seq	(538)	1110	1120
seq	(538)	1120	1130
seq	(538)	1130	1140
seq	(538)	1140	1150
seq	(538)	1150	1160
seq	(538)	1160	1170
seq	(538)	1170	1180
seq	(538)	1180	1190
seq	(538)	1190	1200
seq	(538)	1200	1210
seq	(538)	1210	1220
seq	(538)	1220	1230
seq	(538)	1230	1240
seq	(538)	1240	1250
seq	(538)	1250	1260
seq	(538)	1260	1270
seq	(538)	1270	1280
seq	(538)	1280	1290
seq	(538)	1290	1300
seq	(538)	1300	1310
seq	(538)	1310	1320
seq	(538)	1320	1330
seq	(538)	1330	1340
seq	(538)	1340	1350
seq	(538)	1350	1360
seq	(538)	1360	1370
seq	(538)	1370	1380
seq	(538)	1380	1390
seq	(538)	1390	1400
seq	(538)	1400	1410
seq	(538)	1410	1420
seq	(538)	1420	1430
seq	(538)	1430	1440
seq	(538)	1440	1450
seq	(538)	1450	1460
seq	(538)	1460	1470
seq	(538)	1470	1480
seq	(538)	1480	1490
seq	(538)	1490	1500
seq	(538)	1500	1510
seq	(538)	1510	1520
seq	(538)	1520	1530
seq	(538)	1530	1540
seq	(538)	1540	1550
seq	(538)	1550	1560
seq	(538)	1560	1570
seq	(538)	1570	1580
seq	(538)	1580	1590
seq	(538)	1590	1600
seq	(538)	1600	1610
seq	(538)	1610	1620
seq	(538)	1620	1630
seq	(538)	1630	1640
seq	(538)	1640	1650
seq	(538)	1650	1660
seq	(538)	1660	1670
seq	(538)	1670	1680
seq	(538)	1680	1690
seq	(538)	1690	1700
seq	(538)	1700	1710
seq	(538)	1710	1720
seq	(538)	1720	1730
seq	(538)	1730	1740
seq	(538)	1740	1750
seq	(538)	1750	1760
seq	(538)	1760	1770
seq	(538)	1770	1780
seq	(538)	1780	1790
seq	(538)	1790	1800
seq	(538)	1800	1810
seq	(538)	1810	1820
seq	(538)	1820	1830
seq	(538)	1830	1840
seq	(538)	1840	1850
seq	(538)	1850	1860
seq	(538)	1860	1870
seq	(538)	1870	1880
seq	(538)	1880	1890
seq	(538)	1890	1900
seq	(538)	1900	1910
seq	(538)	1910	1920
seq	(538)	1920	1930
seq	(538)	1930	1940
seq	(538)	1940	1950
seq	(538)	1950	1960
seq	(538)	1960	1970
seq	(538)	1970	1980
seq	(538)	1980	1990
seq	(538)	1990	2000
seq	(538)	2000	2010
seq	(538)	2010	2020
seq	(538)	2020	2030
seq	(538)	2030	2040
seq	(538)	2040	2050
seq	(538)	2050	2060
seq	(538)	2060	2070
seq	(538)	2070	2080
seq	(538)	2080	2090
seq	(538)	2090	2100
seq	(538)	2100	2110
seq	(538)	2110	2120
seq	(538)	2120	2130
seq	(538)	2130	2140
seq	(538)	2140	2150
seq	(538)	2150	2160
seq	(538)	2160	2170
seq	(538)	2170	2180
seq	(538)	2180	2190
seq	(538)	2190	2200
seq	(538)	2200	2210
seq	(538)	2210	2220
seq	(538)	2220	2230
seq	(538)	2230	2240
seq	(538)	2240	2250
seq	(538)	2250	2260
seq	(538)	2260	2270
seq	(538)	2270	2280
seq	(538)	2280	2290
seq	(538)	2290	2300
seq	(538)	2300	2310
seq	(538)	2310	2320
seq	(538)	2320	2330
seq	(538)	2330	2340
seq	(538)	2340	2350
seq	(538)	2350	2360
seq	(538)	2360	2370
seq	(538)	2370	2380
seq	(538)	2380	2390
seq	(538)	2390	2400
seq	(538)	2400	2410
seq	(538)	2410	2420
seq	(538)	2420	2430
seq	(538)	2430	2440
seq	(538)	2440	2450
seq	(538)	2450	2460
seq	(538)	2460	2470
seq	(538)	2470	2480
seq	(538)	2480	2490
seq	(538)	2490	2500
seq	(538)	2500	2510
seq	(538)	2510	2520
seq	(538)	2520	2530
seq	(538)	2530	2540
seq	(538)	2540	2550
seq	(538)	2550	2560
seq	(538)	2560	2570
seq	(538)	2570	2580
seq	(538)	2580	2590
seq	(538)	2590	2600
seq	(538)	2600	2610
seq	(538)	2610	2620
seq	(538)	2620	2630
seq	(538)	2630	2640
seq	(538)	2640	2650
seq	(538)	2650	2660
seq	(538)	2660	2670
seq	(538)	2670	2680
seq	(538)	2680	2690
seq	(538)	2690	2700
seq	(538)	2700	2710
seq	(538)	2710	2720
seq	(538)	2720	2730
seq	(538)	2730	2740
seq	(538)	2740	2750
seq	(538)	2750	2760
seq	(538)	2760	2770
seq	(538)	2770	2780
seq	(538)	2780	2790
seq	(538)	2790	2800
seq	(538)	2800	2810
seq	(538)	2810	2820
seq	(538)	2820	2830
seq	(538)	2830	2840
seq	(538)	2840	2850
seq	(538)	2850	2860
seq	(538)	2860	2870
seq	(538)	2870	2880
seq	(538)	2880	2890
seq	(538)	2890	2900
seq	(538)	2900	2910
seq	(538)	2910	2920
seq	(538)	2920	2930
seq	(538)	2930	2940
seq	(538)	2940	2950
seq	(538)	2950	2960
seq	(538)	2960	2970
seq	(538)	2970	2980
seq	(538)	2980	2990
seq	(538)	2990	3000
seq	(538)	3000	3010
seq	(538)	3010	3020
seq	(538)	3020	3030
seq	(538)	3030	3040
seq	(538)	3040	3050
seq	(538)	3050	3060
seq	(538)	3060	3070
seq	(538)	3070	3080
seq	(538)	3080	3090
seq	(538)	3090	3100
seq	(538)	3100	3110
seq	(538)	3110	3120
seq	(538)	3120	3130
seq	(538)	3130	3140
seq	(538)	3140	3150
seq	(538)	3150	3160
seq	(538)	3160	3170
seq	(538)	3170	3180
seq	(538)	3180	3190
seq	(538)	3190	3200
seq	(538)	3200	3210
seq	(538)	3210	3220
seq	(538)	3220	3230
seq	(538)	3230	3240
seq	(538)	3240	3250
seq	(538)	3250	3260
seq	(538)	3260	3270
seq	(538)	3270	3280
seq	(538)	3280	3290
seq	(538)	3290	3300
seq	(538)	3300	3310
seq	(538)	3310	3320
seq	(538)	3320	3330
seq	(538)	3330	3340
seq	(538)	3340	3350
seq	(538)	3350	3360
seq	(538)	3360	3370
seq	(538)	3370	3380
seq	(538)	3380	3390
seq	(538)	3390	3400
seq	(538)	3400	3410
seq	(538)	3410	3420
seq	(538)	3420	3430
seq	(538)	3430	3440
seq	(538)	3440	3450
seq	(538)	3450	3460
seq	(538)	3460	3470
seq	(538)	3470	3480
seq	(538)	3480	3490
seq	(538)	3490	3500
seq	(538)	3500	3510
seq	(538)	3510	3520
seq	(538)	3520	3530
seq	(538)	3530	3540
seq	(538)	3540	3550
seq	(538)	3550	3560
seq	(538)	3560	3570
seq	(538)	3570	3580
seq	(538)	3580	3590
seq	(538)	3590	3600
seq	(538)	3600	3610
seq	(538)	3610	3620
seq	(538)	3620	3630
seq	(538)	3630	3640
seq	(538)	3640	3650
seq	(538)	3650	3660
seq	(538)	3660	3670
seq	(538)	3670	3680
seq	(538)	3680	3690
seq	(538)	3690	3700
seq	(538)	3700	3710
seq	(538)	3710	3720
seq	(538)	3720	3730
seq	(538)	3730	3740
seq	(538)	3740	3750
seq	(538)	3750	3760
seq	(538)	3760	3770
seq	(538)	3770	3780
seq	(538)	3780	3790

(853) 853
(844) 860
(832) 870
(832) 880
(622) 890
(853) 900
910
920

Category	a.seq
bnc	a.seq
pear	a.seq
7	s.seq
	cons

Section 14

(924) 924 CTGGGATCGTTTCTTTGTACGGGCGGTCAGAAATACAAGTCTCCTGCTTAATGCTTATGTAGAAAGGTGATG
(915) 925 CTGGGATCGTTTCTTTGTACGGGCGGTCAGAAATACAAGTCTCCTGCTTAATGCTTATGTAGAAAGGTGATG
(903) 926 CTGGGATCGTTTCTTTGTACGGGCGGTCAGAAATACAAGTCTCCTGCTTAATGCTTATGTAGAAAGGTGATG
(903) 927 CTGGGATCGTTTCTTTGTACGGGCGGTCAGAAATACAAGTCTCCTGCTTAATGCTTATGTAGAAAGGTGATG
(693) 928 CTGGGATCGTTTCTTTGTACGGGCGGTCAGAAATACAAGTCTCCTGCTTAATGCTTATGTAGAAAGGTGATG
(924) 929 CTGGGATCGTTTCTTTGTACGGGCGGTCAGAAATACAAGTCTCCTGCTTAATGCTTATGTAGAAAGGTGATG

atq	a.seq
bn	a.seq
pet	a.seq
"	s.seq

Section 15

(995) 995 1000 1010 1020 1030 1040 1050 1065

(986)

(974)

(974)

(764)

(995) CTTCTAGTGTGCTATTTCTTGCTGGTGGCTGCCGTTAC GGTTAAACTGTCACCTGTTGAAGGTTGTGGA Section 16

category	A.seq
trunc	a.a.seq
partial	a.a.seq
complete	a.s.seq
consensus	consensus

Section 16

1066
 1067
 1068
 1069
 1070
 1071
 1072
 1073
 1074
 1075
 1076
 1077
 1078
 1079
 1080
 1081
 1082
 1083
 1084
 1085
 1086
 1087
 1088
 1089
 1090
 1091
 1092
 1093
 1094
 1095
 1096
 1097
 1098
 1099
 1100
 1101
 1102
 1103
 1104
 1105
 1106
 1107
 1108
 1109
 1110
 1111
 1112
 1113
 1114
 1115
 1116
 1117
 1118
 1119
 1120
 1121
 1122
 1123
 1124
 1125
 1126
 1127
 1128
 1129
 1130
 1131
 1132
 1133
 1134
 1135
 1136
 1137
 1138
 1139
 1140
 1141
 1142
 1143
 1144
 1145
 1146
 1147
 1148
 1149
 1150
 1151
 1152
 1153
 1154
 1155
 1156
 1157
 1158
 1159
 1160
 1161
 1162
 1163
 1164
 1165
 1166
 1167
 1168
 1169
 1170
 1171
 1172
 1173
 1174
 1175
 1176
 1177
 1178
 1179
 1180
 1181
 1182
 1183
 1184
 1185
 1186
 1187
 1188
 1189
 1190
 1191
 1192
 1193
 1194
 1195
 1196
 1197
 1198
 1199
 1200
 1201
 1202
 1203
 1204
 1205
 1206
 1207
 1208
 1209
 1210
 1211
 1212
 1213
 1214
 1215
 1216
 1217
 1218
 1219
 1220
 1221
 1222
 1223
 1224
 1225
 1226
 1227
 1228
 1229
 1230
 1231
 1232
 1233
 1234
 1235
 1236
 1237
 1238
 1239
 1240
 1241
 1242
 1243
 1244
 1245
 1246
 1247
 1248
 1249
 1250
 1251
 1252
 1253
 1254
 1255
 1256
 1257
 1258
 1259
 1260
 1261
 1262
 1263
 1264
 1265
 1266
 1267
 1268
 1269
 1270
 1271
 1272
 1273
 1274
 1275
 1276
 1277
 1278
 1279
 1280
 1281
 1282
 1283
 1284
 1285
 1286
 1287
 1288
 1289
 1290
 1291
 1292
 1293
 1294
 1295
 1296
 1297
 1298
 1299
 1300
 1301
 1302
 1303
 1304
 1305
 1306
 1307
 1308
 1309
 1310
 1311
 1312
 1313
 1314
 1315
 1316
 1317
 1318
 1319
 1320
 1321
 1322
 1323
 1324
 1325
 1326
 1327
 1328
 1329
 1330
 1331
 1332
 1333
 1334
 1335
 1336
 1337
 1338
 1339
 1340
 1341
 1342
 1343
 1344
 1345
 1346
 1347
 1348
 1349
 1350
 1351
 1352
 1353
 1354
 1355
 1356
 1357
 1358
 1359
 1360
 1361
 1362
 1363
 1364
 1365
 1366
 1367
 1368
 1369
 1370
 1371
 1372
 1373
 1374
 1375
 1376
 1377
 1378
 1379
 1380
 1381
 1382
 1383
 1384
 1385
 1386
 1387
 1388
 1389
 1390
 1391
 1392
 1393
 1394
 1395
 1396
 1397
 1398
 1399
 1400
 1401
 1402
 1403
 1404
 1405
 1406
 1407
 1408
 1409
 1410
 1411
 1412
 1413
 1414
 1415
 1416
 1417
 1418
 1419
 1420
 1421
 1422
 1423
 1424
 1425
 1426
 1427
 1428
 1429
 1430
 1431
 1432
 1433
 1434
 1435
 1436
 1437
 1438
 1439
 1440
 1441
 1442
 1443
 1444
 1445
 1446
 1447
 1448
 1449
 1450
 1451
 1452
 1453
 1454
 1455
 1456
 1457
 1458
 1459
 1460
 1461
 1462
 1463
 1464
 1465
 1466
 1467
 1468
 1469
 1470
 1471
 1472
 1473
 1474
 1475
 1476
 1477
 1478
 1479
 1480
 1481
 1482
 1483
 1484
 1485
 1486
 1487
 1488
 1489
 1490
 1491
 1492
 1493
 1494
 1495
 1496
 1497
 1498
 1499
 1500
 1501
 1502
 1503
 1504
 1505
 1506
 1507
 1508
 1509
 1510
 1511
 1512
 1513
 1514
 1515
 1516
 1517
 1518
 1519
 1520

atom	A.seq
base	a.seq
path	a.seq
	s.seq
	ensus



atel
buc
petar

ate
but
pe a

ated
in
part

ate
by
pro



	(1563)	1563	1572
ate ₁	A seq (1554)	T T A C	
tr ₁	A seq (1542)	T T A C	
pet ₁	A seq (1542)	C T A C	G
g ₁	S seq (1332)	T T A A	- - - -
consus	(1563)	A A A G C A T T A A	



Section 5

(297) 297
 (290) LKLMERFGVSAEHSBSWDRFFVKGGQKYKSPGNAYVEGDASSASYFLAGAAITGGTIVTEGCGTTSLOQGDVKFA
 (286) LKLMERFGVSAEHSBSWDRFFVKGGQKYKSPGNAYVEGDASSASYFLAGAAITGGTIVTEGCGTTSLOQGDVKFA
 (286) LKLMERFGVSAEHSBSWDRFFVKGGQKYKSPGNAYVEGDASSASYFLAGAAITGGTIVTEGCGTTSLOQGDVKFA
 (214) LKLMERFGVSAEHSBSWDRFFVKGGQKYKSPGNAYVEGDASSASYFLAGAAITGGTIVTEGCGTTSLOQGDVKFA
 (297) LKLMERFGVSAEHSBSWDRFFVKGGQKYKSPGNAYVEGDASSASYFLAGAAITGGTIVTEGCGTTSLOQGDVKFA

Section 6

(371) 371
 (364) EVLEKMGCKVSWTENSVTVTGPPRDVAFGRKHLRAIDVNMNKMPPDVAMTLAVVALFADGPTTIRDVASWVRVKETE
 (360) EVLEKMGCKVSWTENSVTVTGPPRDVAFGRKHLRAIDVNMNKMPPDVAMTLAVVALFADGPTTIRDVASWVRVKETE
 (360) EVLEKMGCKVSWTENSVTVTGPPRDVAFGRKHLRAIDVNMNKMPPDVAMTLAVVALFADGPTTIRDVASWVRVKETE
 (288) EVLEKMGCKVSWTENSVTVTGPPRDVAFGRKHLRAIDVNMNKMPPDVAMTLAVVALFADGPTTIRDVASWVRVKETE
 (371) EVLEKMGCKVSWTENSVTVTGPPRDVAFGRKHLRAIDVNMNKMPPDVAMTLAVVALFADGPTTIRDVASWVRVKETE

Section 7

(445) 445
 (438) RMIAICTELRKLGLATVEEGSDYCIITPPEKLVNTEIDTYDDHRMAMAFSLAACADVPVTINDPGCTRKTFFPDYF
 (434) RMIAICTELRKLGLATVEEGSDYCIITPPEKLVNTEIDTYDDHRMAMAFSLAACADVPVTINDPGCTRKTFFPDYF
 (434) RMIAICTELRKLGLATVEEGSDYCIITPPEKLVNTEIDTYDDHRMAMAFSLAACADVPVTINDPGCTRKTFFPDYF
 (362) RMIAICTELRKLGLATVEEGSDYCIITPPEKLVNTEIDTYDDHRMAMAFSLAACADVPVTINDPGCTRKTFFPDYF
 (445) RMIAICTELRKLGLATVEEGSDYCIITPPEKLVNTEIDTYDDHRMAMAFSLAACADVPVTINDPGCTRKTFFPDYF

Section 8

(519) 519
 (512) QVLESITKH
 (508) QVLESITKH
 (508) QVLESITKH
 (436) QVLESITKH
 (519) QVLESITKH



<u>Oligo Name</u>	<u>Oligo Sequence (5'→3')</u>
ATEPS-A ₁₇₇	CGTTTCCACCTGCAGCAGTGACCGCAGCGGTAAGTGGACGCATTGCTGTTGCTGCATTACCGAG
ATEPS-AI	CGTTTCCACCTGCAGCAGTGACCGCAGCGGTAAGTGGACGCATTGCTATTGCTGCATTACCGAG
ATEPS-IS	CGTTTCCACCTGCAGCAGTGACCGCAGCGGTAAGTGAACGCATTGCTATTCTGCATTACCGAG
ATEPS-AS	CGTTTCCACCTGCAGCAGTGACCGCAGCGGTAAGTGAACGCATTGCTGTTGCTGCATTACCGAG
ATEPS-AIS	CGTTTCCACCTGCAGCAGTGACCGCAGCGGTAAGTGAACGCATTGCTATTGCTGCATTACCGAG
ATEPS-I ₁₇₇	CGTTTCCACCTGCAGCAGTGACCGCAGCGGTAAGTGGACGCATTGCTGTTATTGCATTACCGAG
ATEPS-VS	CGTTTCCACCTGCAGCAGTGACCGCAGCGGTAAGTGAACGCATTGCTACTCCTGCATTACCGAG
ATEPS-LS	CGTTTCCACCTGCAGCAGTGACCGCAGCGGTAAGTGAACGCATTGCTAATCCTGCATTACCGAG
ATEPS-AV	CGTTTCCACCTGCAGCAGTGACCGCAGCGGTAAGTGGACGCATTGCTACTGCTGCATTACCGAG
ATEPS-AL	CGTTTCCACCTGCAGCAGTGACCGCAGCGGTAAGTGGACGCATTGCTAATGCTGCATTACCGAG

FIG. 5

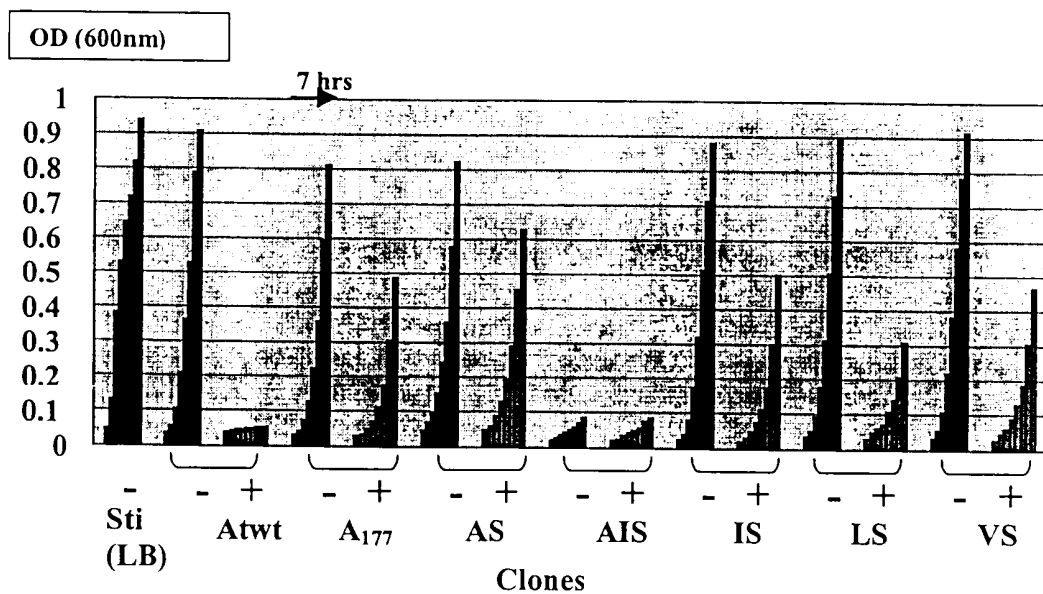


FIG. 6

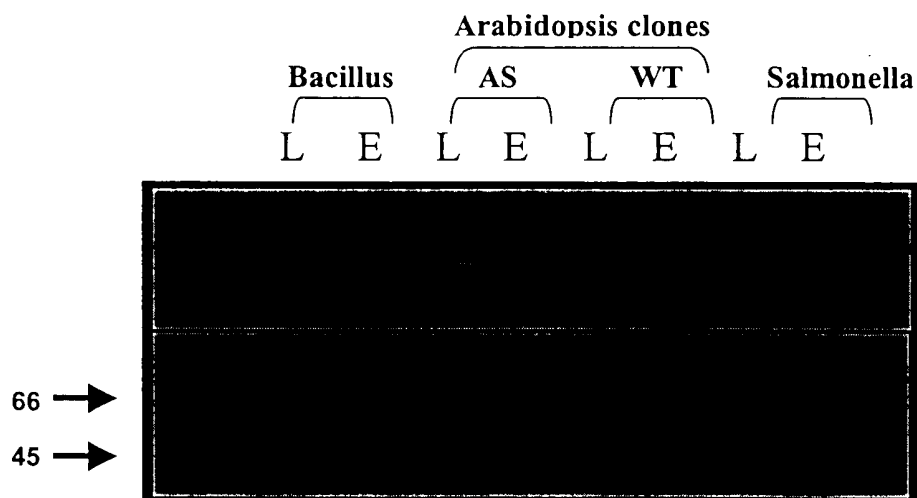


FIG. 7